

REMARKS

Claims 1, 3, 4 and 6 are now pending in the application. Claims 2 and 5 are cancelled. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1-6 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Kanematsu et al. (U.S. 2002/0113832). The rejections as to claims 2 and 5 are rendered moot by cancellation. The rejections as to claims 1, 3, 4 and 6 are respectfully traversed.

Claim 1 recites a driving device of an ink-jet print head comprising a data storage unit, a data determination unit, a driving device shift register, and a clock signal generation unit. The clock signal generation unit generates first clock signals for driving the driving device shift register and second clock signals for driving an ink-jet print head shift register. When the data items of the plurality are identical, the data determination unit generates a first signal and a second signal. The first signal indicates that the data items are identical. The second signal indicates one of that the data items are discharge data and that the data items are non-discharge data. When the first signal is generated, the clock signal generation unit continues generating the second clock signals and stops generating the first clock signals for a number of cycles corresponding to a number of data items in the plurality. When the first signal is generated, the data determination unit outputs the second signal to the ink-jet print head shift register.

As supported by the Specification, by stopping the generation of the first clock signals in this way, the power consumption and heat caused by the driving device shift register are reduced. Specification, paragraph [0043].

Kanematsu et al. fails to teach or suggest the driving device recited by claim 1. Kanematsu et al. describes an ink jet recording apparatus with a plurality of recording heads. Kanematsu et al., Abstract. Data signals are sequentially transferred to and stored in a shift register. Kanematsu et al., page 6, paragraph [0090]. When the transfer of a block of data is completed, a latch signal is transmitted. Kanematsu et al., page 6, paragraph [0090]. The transmission of the latch signal causes the data in the shift register to be transferred to a latch circuit. Kanematsu et al., page 6, paragraph [0090].

Kanematsu et al. is silent as to a clock signal generation unit that generates first clock signals for a driving device shift register and second clock signals for an ink-jet print head shift register. Kanematsu et al. is also silent as to generating first and second signals when data items are identical, the first signal indicating that the data items are identical and the second signal indicating one of that the data items are discharge data and that the data items are non-discharge data. Kanematsu et al. is also silent as to stopping the generation of the first clock signals for a number of cycles corresponding to a number of data items in the plurality while continuing the generation of the second clock signals. Kanematsu et al. is also silent as to a data determination unit outputs the second signal to the ink-jet print head shift register when the first signal is generated.

For these reasons, Kanematsu et al. fails to teach or suggest each and every limitation recited by claim 1. Therefore, claim 1 defines over the prior art and reconsideration and withdrawal of the rejection are respectfully requested. With regard to claims 3 and 6, Applicant notes that claims 3 and 6 depend from claim 1, which defines over the prior art as discussed above. Therefore, claims 3 and 6 also define over the prior art and reconsideration and withdrawal of the rejections are respectfully requested.

Claim 4 recites a control method of a driving device of an ink-jet print head including a data storage step, a data determination step, a data output step, a first clock signal generation step, and a second clock signal generation step. When the data items of a plurality of data items are identical, the data determination step comprises generating a first signal that indicates that the data items are identical and a second signal that indicates one of that the data items indicate discharge data and that the data items indicate non-discharge data. When the first signal is generated, the first clock signal generation step further comprises pausing the generating of clock signals for a driving device shift register for a number of cycles corresponding to a number of data items in the plurality. When the first signal is generated, the data output step further comprises outputting the second signal to an ink-jet print head shift register.

Similar limitations are recited by claim 1. For at least the above reasons, claim 4 defines over the prior art and reconsideration and withdrawal of the rejection is respectfully requested.

CONCLUSION

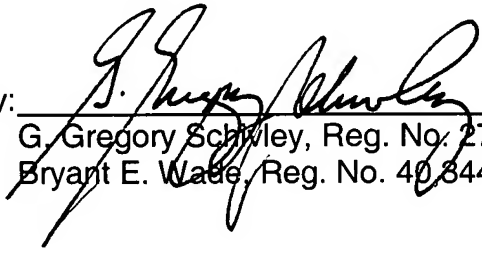
It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: March 24, 2006

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